

In the Claims

Claim 1 (Withdrawn): A method for identifying a modulator of at least one gene that is differentially-expressed in fibrotic tissue or during fibrogenesis, or a polypeptide encoded by the differentially-expressed gene, in a cell population, comprising: (a) contacting the cell population with a test agent under conditions effective for the test agent to modulate a differentially-expressed gene, to modulate the biological activity of the polypeptide encoded by the differentially-expressed gene; and (b) determining whether the test agent modulates the expression of the gene or biological activity of the polypeptide encoded by the gene.

Claim 2 (Withdrawn): The method of claim 1, wherein said determining step comprises detecting mRNA or the polypeptide encoded by the differentially-expressed gene.

Claim 3 (Cancelled)

Claim 4 (Withdrawn): The method of claim 1, wherein the cell population comprises endometrial cells of the female reproductive tract.

Claim 5 (Withdrawn): The method of claim 1, wherein the cell population comprises human cells.

Claim 6 (Withdrawn): The method of claim 1, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of docking protein 1, 62 kD (downstream of tyrosine kinase 1); centromere protein A (17 kD); catenin (cadherin-associated protein), beta 1 (88 kD); nuclear receptor subfamily 1, group I, member 2; v-rel avian reticuloendotheliosis viral oncogene homolog A; LGN Protein; CDC28 protein kinase 1; hypothetical protein; solute carrier family 17 (sodium phosphate), member 1; FOS-like antigen-1; nuclear matrix protein p84; LERK-6 (EPLG6); visinin-like 1; phosphodiesterase 10A; KH-type splicing regulatory protein (FUSE binding protein 2); Polyposis locus (DP1 gene) mRNA; microtubule-associated protein 2; CDC5 (cell division cycle 5, S pombe, homolog)-like; Centromere

autoantigen C (CENPC) mRNA; RNA guanylyltransferase and 5'-phosphatase; Nijmegen breakage syndrome 1 (nibrin); ribonuclease, RNase A family, 4; keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris); basic helix-loop-helix domain containing, class B, 2; dual specificity phosphatase 1; annexin A11; putative receptor protein; Human endogenous retrovirus HERV-K(HML6); mitogen-activated protein kinase kinase kinase 12; TXK tyrosine kinase; kynureninase (L-kynurenine hydrolase); ubiquitin specific protease 4 (proto-oncogene); peroxisome biogenesis factor 13; olfactory receptor, family 2, subfamily F, member 1; membrane protein, palmitoylated 3 (MAGUK p55 subfamily member 3); origin recognition complex, subunit 1 (yeast homolog)-like; dTDP-D-glucose 4,6-dehydratase; cytochrome c oxidase subunit VIa polypeptide 2; gamma-tubulin complex protein 2; Monocyte chemotactic protein-3; myelin transcription factor 1; inhibitor of growth family, member 1-like; thyroid hormone receptor, alpha myosin-binding protein C, slow-type; fragile X mental retardation 2; sonic hedgehog (Drosophila) homolog; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2; SFRS protein kinase 2; excision repair cross-complementing rodent repair deficiency; cyclin-dependent kinase 5, regulatory subunit 1 (p35); poly(A)-specific ribonuclease (deadenylation nuclease); solute carrier family 12 (potassium/chloride transporters), member 4; Pseudogene for metallothionein; natriuretic peptide precursor A; intercellular adhesion molecule 2; apoptosis antagonizing transcription factor; similar to rat HREV107; major histocompatibility complex, class II, DP beta 1; MpV17 transgene, murine homolog, glomerulosclerosis; uroporphyrinogen decarboxylase; proteasome (prosome, macropain) 26S subunit, ATPase, 1; fms-related tyrosine kinase 3 ligand; actin, gamma 1; Protein Kinase Pitslr, Alpha, Alt. Splice 1-Feb; nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha; pyruvate kinase, muscle; telomeric repeat binding factor 2; cell division cycle 2, G1 to S and G2 to M; ADP-ribosylation factor 3; NRF1 Protein; H factor (complement)-like 3; serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 6; mRNA of muscle specific gene M9; solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 3; ribosomal protein L36a; suppressor of Ty (S. cerevisiae) 4 homolog 1; amino-terminal enhancer of split; ubiquitin A-52 residue ribosomal protein fusion product 1; hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase; chaperonin containing TCP1, subunit 2 (beta); tyrosine kinase with immunoglobulin and epidermal growth factor homology; domains; Fc fragment of IgG, receptor,

transporter, alpha; NRD1 convertase; ADP-ribosylation factor 5; transcription elongation factor A (SII), 1; like mouse brain protein E46; titin; fibromodulin; and Abi-interactor 2 (Abi-2).

Claim 7 (Withdrawn): The method of claim 1, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of CDKN1B, CDKN1C, CTGF, fibromodulin, and Abi-2.

Claim 8 (Withdrawn): The method of claim 1, wherein the at least one differentially expressed gene includes at least one of IL-11, IL-13, EGR1, EGR2, EGR3, CITED2, P300, E2F1, E2F2, E2F3, E2F4, E2F5, MCP3, CXCL5, CCL7, SMAD3, TYMS, GT198, SMAD7, NCOR2, TIMP-1, and ADAM17.

Claim 9 (Withdrawn): The method of claim 1, wherein the at least one differentially-expressed gene includes at least one of those genes listed in Table 9.

Claim 10 (Withdrawn): The method of claim 1, wherein the at least one differentially-expressed gene includes at least one gene selected from the group consisting of stanniocalcin 2, interleukin 11, disintegrin and metalloproteinase domain 17, early growth response 3, fibromodulin, collagen type XVIII alpha 1, and interleukin 13.

Claim 11 (Withdrawn): The method of claim 1, wherein the at least one differentially expressed gene includes a plurality of genes comprising stanniocalcin 2, interleukin 11, disintegrin and metalloproteinase domain 17, early growth response 3, fibromodulin, collagen type XVIII alpha 1, and interleukin 13.

Claim 12 (Withdrawn): A method for detecting a fibrotic disorder in a subject by: (a) providing a biological sample obtained from the subject; (b) analyzing the expression of at least one gene that is differentially expressed in the fibrotic disorder of interest as compared to normal tissue; and (c) correlating the expression of the at least one differentially expressed gene with the presence or absence of the fibrotic disorder in the subject.

Claim 13 (Withdrawn): The method of claim 12, wherein the fibrotic disorder is a fibrotic disorder of the female reproductive tract.

Claim 14 (Withdrawn): The method of claim 12, wherein the fibrotic disorder is a uterine fibrosis.

Claim 15 (Withdrawn): The method of claim 12, wherein the fibrotic disorder is a fibrotic disorder of the female reproductive tract selected from the group consisting of leiomyoma, endometriosis, ovarian hyperstimulation syndrome, adhesion, and endometrial cancer.

Claim 16 (Withdrawn): The method of claim 12, wherein the sample comprises smooth muscle cells, endometrium, or peritoneal fluid.

Claim 17 (Cancelled)

Claim 18 (Withdrawn): The method of claim 12, wherein the normal tissue comprises myometrium.

Claim 19 (Withdrawn): The method of claim 12, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of docking protein 1, 62 kD (downstream of tyrosine kinase 1); centromere protein A (17 kD); catenin (cadherin-associated protein), beta 1 (88 kD); nuclear receptor subfamily 1, group 1, member 2; v-rel avian reticuloendotheliosis viral oncogene homolog A; LGN Protein; CDC28 protein kinase 1; hypothetical protein; solute carrier family 17 (sodium phosphate), member 1; FOS-like antigen-1; nuclear matrix protein p84; LERK-6 (EPLG6); visinin-like 1; phosphodiesterase 10A; KH-type splicing regulatory protein (FUSE binding protein 2); Polyposis locus (DPI gene) mRNA; microtubule-associated protein 2; CDC5 (cell division cycle 5, S pombe, homolog)-like; Centromere autoantigen C (CENPC) mRNA; RNA guanylyltransferase and 5'-phosphatase; Nijmegen breakage syndrome 1 (nibrin); ribonuclease, RNase A family, 4; keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris); basic helix-loop-helix domain containing, class B, 2; dual specificity phosphatase 1; annexin A11; putative receptor protein; Human endogenous retrovirus HERV-

K(HML6); mitogen-activated protein kinase kinase kinase 12; TXK tyrosine kinase; kynureninase (L-kynurenine hydrolase); ubiquitin specific protease 4 (proto-oncogene); peroxisome biogenesis factor 13; olfactory receptor, family 2, subfamily F, member 1; membrane protein, palmitoylated 3 (MAGUK p55 subfamily member 3); origin recognition complex, subunit 1 (yeast homolog)-like; dTDP-D-glucose 4,6-dehydratase; cytochrome c oxidase subunit VIa polypeptide 2; gamma-tubulin complex protein 2; Monocyte chemotactic protein-3; myelin transcription factor 1; inhibitor of growth family, member 1-like; thyroid hormone receptor, alpha myosin-binding protein C, slow-type; fragile X mental retardation 2; sonic hedgehog (Drosophila) homolog; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2; SFRS protein kinase 2; excision repair cross-complementing rodent repair deficiency; cyclin-dependent kinase 5, regulatory subunit 1 (p35); poly(A)-specific ribonuclease (deadenylation nuclease); solute carrier family 12 (potassium/chloride transporters), member 4; Pseudogene for metallothionein; natriuretic peptide precursor A; intercellular adhesion molecule 2; apoptosis antagonizing transcription factor; similar to rat HREV107; major histocompatibility complex, class II, DP beta 1; MpV17 transgene, murine homolog, glomerulosclerosis; uroporphyrinogen decarboxylase; proteasome (prosome, macropain) 26S subunit, ATPase, 1; fms-related tyrosine kinase 3 ligand; actin, gamma 1; Protein Kinase Pitslr, Alpha, Alt. Splice 1-Feb; nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha; pyruvate kinase, muscle; telomeric repeat binding factor 2; cell division cycle 2, G1 to S and G2 to M; ADP-ribosylation factor 3; NRF1 Protein; H factor (complement)-like 3; serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 6; mRNA of muscle specific gene M9; solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 3; ribosomal protein L36a; suppressor of Ty (S. cerevisiae) 4 homolog 1; amino-terminal enhancer of split; ubiquitin A-52 residue ribosomal protein fusion product 1; hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase; chaperonin containing TCP1, subunit 2 (beta); tyrosine kinase with immunoglobulin and epidermal growth factor homology; domains; Fc fragment of IgG, receptor, transporter, alpha; NRD1 convertase; ADP-ribosylation factor 5; transcription elongation factor A (SII), 1; like mouse brain protein E46; titin; fibromodulin; and Abi-interactor 2 (Abi-2).

Claim 20 (Withdrawn): The method of claim 12, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of CDKN1B, CDKN1C, CTGF, fibromodulin, and Abi-2.

Claim 21 (Withdrawn): The method of claim 12, wherein the at least one differentially expressed gene includes at least one of IL-11, IL-13, EGR1, EGR2, EGR3, CITED2, P300, E2F1, E2F2, E2F3, E2F4, E2F5, MCP3, CXCL5, CCL7, SMAD3, TYMS, GT198, SMAD7, NCOR2, TIMP-1, and ADAM17, wherein elevated expression of IL-11, IL-13, EGR1, EGR2, EGR3, CITED2, P300, E2F1, E2F2, E2F3, E2F4, E2F5, MCP3, CXCL5, CCL7, SMAD3, TYMS, and/or GT198 is indicative of a fibrotic disorder; and wherein reduced expression of SMAD7, NCOR2, TIMP-1, and/or ADAM17 is indicative of a fibrotic disorder.

Claim 22 (Withdrawn): The method of claim 12, wherein the at least one differentially expressed gene includes at least one of those genes listed in Table 9.

Claim 23 (Withdrawn): The method of claim 12, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of stanniocalcin 2, interleukin 11, disintegrin and metalloproteinase domain 17, early growth response 3, fibromodulin, collagen type XVIII alpha 1, and interleukin 13.

Claim 24 (Withdrawn): The method of claim 12, wherein the at least one differentially expressed gene includes a plurality of genes comprising stanniocalcin 2, interleukin 11, disintegrin and metalloproteinase domain 17, early growth response 3, fibromodulin, collagen type XVIII alpha 1, and interleukin 13.

Claim 25 (Withdrawn): The method of claim 12, wherein the subject is human.

Claim 26 (Withdrawn): The method of claim 12, further comprising diagnosing the subject based on said correlating.

Claim 27 (Original): A method for modulating gene expression in fibrotic tissue, comprising contacting the fibrotic tissue *in vitro* or *in vivo* with an agent that modulates expression of at least one differentially expressed gene in the tissue.

Claim 28 (Original): The method of claim 27, wherein the agent is a TGF-beta signaling inhibitor.

Claim 29 (Original): The method of claim 27, wherein the agent is a TGF-beta II receptor inhibitor.

Claim 30 (Cancelled)

Claim 31 (Original): The method of claim 27, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of docking protein 1, 62 kD (downstream of tyrosine kinase 1); centromere protein A (17 kD); catenin (cadherin-associated protein), beta 1 (88 kD); nuclear receptor subfamily 1, group I, member 2; v-rel avian reticuloendotheliosis viral oncogene homolog A; LGN Protein; CDC28 protein kinase 1; hypothetical protein; solute carrier family 17 (sodium phosphate), member 1; FOS-like antigen-1; nuclear matrix protein p84; LERK-6 (EPLG6); visinin-like 1; phosphodiesterase 10A; KH-type splicing regulatory protein (FUSE binding protein 2); Polyposis locus (DP1 gene) mRNA; microtubule-associated protein 2; CDC5 (cell division cycle 5, S pombe, homolog)-like; Centromere autoantigen C (CENPC) mRNA; RNA guanylyltransferase and 5'-phosphatase; Nijmegen breakage syndrome 1 (nibrin); ribonuclease, RNase A family, 4; keratin 10 (epidermolytic hyperkeratosis; keratosis palmaris et plantaris); basic helix-loop-helix domain containing, class B, 2; dual specificity phosphatase 1; annexin A11; putative receptor protein; Human endogenous retrovirus HERV-K(HML6); mitogen-activated protein kinase kinase kinase 12; TXK tyrosine kinase; kynureninase (L-kynurenine hydrolase); ubiquitin specific protease 4 (proto-oncogene); peroxisome biogenesis factor 13; olfactory receptor, family 2, subfamily F, member 1; membrane protein, palmitoylated 3 (MAGUK p55 subfamily member 3); origin recognition complex, subunit 1 (yeast homolog)-like; dTDP-D-glucose 4,6-dehydratase; cytochrome c oxidase subunit VIa polypeptide 2; gamma-tubulin complex protein 2; Monocyte chemotactic protein-3; myelin transcription factor 1; inhibitor of

growth family, member 1-like; thyroid hormone receptor, alpha myosin-binding protein C, slow-type; fragile X mental retardation 2; sonic hedgehog (*Drosophila*) homolog; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2; SFRS protein kinase 2; excision repair cross-complementing rodent repair deficiency; cyclin-dependent kinase 5, regulatory subunit 1 (p35); poly(A)-specific ribonuclease (deadenylation nuclease); solute carrier family 12 (potassium/chloride transporters), member 4; Pseudogene for metallothionein; natriuretic peptide precursor A; intercellular adhesion molecule 2; apoptosis antagonizing transcription factor; similar to rat HREV107; major histocompatibility complex, class II, DP beta 1; MpV17 transgene, murine homolog, glomerulosclerosis; uroporphyrinogen decarboxylase; proteasome (prosome, macropain) 26S subunit, ATPase, 1; fms-related tyrosine kinase 3 ligand; actin, gamma 1; Protein Kinase Pitslre, Alpha, Alt. Splice 1-Feb; nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha; pyruvate kinase, muscle; telomeric repeat binding factor 2; cell division cycle 2, G1 to S and G2 to M; ADP-ribosylation factor 3; NRF1 Protein; H factor (e complement)-like 3; serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 6; mRNA of muscle specific gene M9; solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 3; ribosomal protein L36a; suppressor of Ty (*S. cerevisiae*) 4 homolog 1; amino-terminal enhancer of split; ubiquitin A-52 residue ribosomal protein fusion product 1; hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase; chaperonin containing TCP1, subunit 2 (beta); tyrosine kinase with immunoglobulin and epidermal growth factor homology; domains; Fe fragment of IgG, receptor, transporter, alpha; NRD1 convertase; ADP-ribosylation factor 5; transcription elongation factor A (SII), 1; like mouse brain protein E46; titin; fibromodulin; and Abi-interactor 2 (Abi-2).

Claim 32 (Original): The method of claim 27, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of CDKN1B, CDKN1C, CTGF, fibromodulin, and Abi-2.

Claim 33 (Original): The method of claim 27, wherein the at least one differentially expressed gene includes at least one of IL-11, IL-13, EGR1, EGR2, EGR3, CITED2, P300, E2F1, E2F2, E2F3, E2F4, E2F5, MCP3, CXCL5, CCL7, SMAD3, TYMS, GT198, SMAD7, NCOR2, TIMP-1, and ADAM17.

Claim 34 (Original): The method of claim 27, wherein the at least one differentially expressed gene includes at least one of those genes listed in Table 9.

Claim 35 (Original): The method of claim 27, wherein the at least one differentially expressed gene includes at least one gene selected from the group consisting of stanniocalcin 2, interleukin 11, disintegrin and metalloproteinase domain 17, early growth response 3, fibromodulin, collagen type XVIII alpha 1, and interleukin 13.

Claim 36 (Original): The method of claim 27, wherein the at least one differentially expressed gene includes a plurality of genes comprising stanniocalcin 2, interleukin 11, disintegrin and metalloproteinase domain 17, early growth response 3, fibromodulin, collagen type XVIII alpha 1, and interleukin 13.

Claim 37 (Previously presented): The method of claim 27, wherein the agent is a selective estrogen receptor modulator (SERM), selective progesterone receptor modulator (SPRM), or mast cell inhibitor.

Claims 38-39 (Cancelled)

Claim 40 (Original): The method of claim 27, wherein the agent has a pyrazolopyridine scaffold, a pyrazole scaffold, an imidazopyridine scaffold, a triazole scaffold, a pyridopyrimidine scaffold, or an isothiazole scaffold.

Claim 41 (Original): The method of claim 27, wherein the agent is a GnRh agonist or antagonist.

Claim 42 (Currently amended): The method of claim 27, wherein the agent is at least one selected from the group consisting of roloxifene; asoprisnil (J867); RU486; SB-505124; SB-431542; ~~tranlist~~ tranilast; cystatin C (CystC); SD-208; LY550410; LY580276; pitavastatin; 1,5 naphthyridine amiothiazole derivative; 1,5 naphthyridine pyrazole derivative; and ursolic acid.

Claims 43-55 (Cancelled)

Claim 56 (New): The method of claim 27, wherein the at least one differentially expressed gene includes CTGF, fibromodulin, IL-11, IL-13, EGR1, EGR2, EGR3, MCP-1, MCP3, CXCL5, CCL7, SMAD3, SMAD7, TGF- β RII, TIMP-1, stanniocalcin 2, and ADAM17.